

Appl. No. 10/709,461  
Amdt. dated December 7, 2004  
Reply to Office action of September 16, 2004

**REMARKS**

**Claims 2, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carroll (USP 5,130,571) in view of Tsai (USP 5,825,219)**

Applicant asserts that there is no motivation for a person skilled in the art to combine  
5 the circuit structure shown in Fig.2 by Tsai with the circuit structure shown in Fig.4 by Carroll.

Carroll discloses in Fig.4 a sample and hold circuit 20 having two transistors T24, T22. As shown in Fig.5, transistor T24 turns off first, and transistor T25 turns off second. However, Carroll neither teaches that the transistors T24, T22 are of different sizes as claimed by the  
10 present invention in claim 11, nor that the transistors T24, T22 should be switched off in decreasing order based on switch size as claimed by the present invention in claims 2 and 12.

Tsai discloses in Fig.2 a preferred embodiment of an output driver. As stated in Col 1 lines 15-18, "the main object of the instant invention is to provide an alternative approach to achieve fastest possible switching rates between logic low and logic high signals on a  
15 computer bus system while minimizing noise". The output driver of Fig.2 includes many components, the operations of which are described by Tsai. However, Tsai does not disclose which components or exactly what feature of the circuit structure of Fig.2 causes the noise of the output driver to be reduced or the speed of the output driver to be improved.

Examiner stated that "the plurality of the differently sized switched elements are  
20 turned off (released) in the order of the largest to smallest transistors (340, 320, 300) in order to improve speed and minimize noise". However, Tsai does not teach that this is why the transistors (340, 320, 300) are differently sized or are switched off in this order. Tsai simply teaches that in a "preferred arrangement, relative sizes of the three output NMOS transistors are so arranged that NMOS transistor 300 is smallest, NMOS transistor 320 is medium and  
25 NMOS transistor 340 is largest." (col 3, lines 18-21) This implies that other arrangements of the NMOS transistors 300, 320, 340 are also possible while still achieving the stated invention goal of reducing noise and increasing speed on a computer bus system. The specific

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components or feature of the circuit structure of Fig.2 that reduce the noise and increase the speed of the output driver are not stated or implied. Furthermore, the purpose of the output driver disclosed by Tsai is to reduce the noise and improve the speed on a computer bus system. This is not similar to the problem of clock feedthrough solved by the present invention. According to the objective and teachings stated by Tsai, it can only be ascertained that the circuit structure of the output driver of Fig.2 as a whole achieves fastest possible switching rates between logic low and logic high signals while minimizing noise on a computer bus system.

Applicant therefore does not agree with Examiner that "it would have been obvious to a person skilled in the art at the time of the invention was made to size transistor T24 of Carroll to be larger than the transistor T22 for the purpose of improving speed and minimizing noise as taught by Tsai". Tsai does not teach that differently sized transistors being switched off in a particular order improves speed and minimizes noise. Tsai only discloses an alternative output driver for a computer system. As such, applicant asserts there is no motivation for a person skilled in the art to combine the circuit structure disclosed in Fig.2 of Tsai with the circuit structure disclosed in Fig.4 by Carroll. Reconsideration of claims 2, 11, and 12 is respectfully requested. As claims 3-10 are dependent on claim 2, and as claims 13-20 are dependent on claim 12; if claims 2 and 12 are found allowable, claims 3-10 and 13-20 should also be found allowable.

**Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Carroll (USP 5,130,571)**

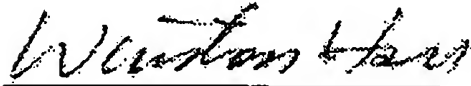
Claim 1 is amended to include the limitation that the positive side switch elements are differently sized. Therefore, amended claim 1 now includes a feature (differently sized positive side switch elements) not taught by Carroll. As amended claim 1 now recites limitations similar to original claim 11 and as the limitation differently sized is already

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included in original dependent claim 2, applicant anticipates that the amendment to claim 1 does not present new issues requiring further consideration or search. Furthermore, applicant asserts that amended claim 1 is not obvious in view of the teachings of Carroll (USP 5,130,571) and Tsai (USP 5,825,219) for the same reasons as given in the above-stated argument against the 35 U.S.C. 103 rejection of claim 11. No new matter is added by this amendment. Consideration of the amendment is respectfully requested.

Sincerely yours,

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